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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,331	06/15/2005	Christian Herzig	WAS0699PUSA	8735
22045 7590 04/09/2007 BROOKS KUSHMAN P.C. 1000 TOWN CENTER TWENTY-SECOND FLOOR SOUTHFIELD, MI 48075			EXAMINER ZIMMER, MARC S	
			ART UNIT 1712	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/09/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/539,331

Applicant(s)

HERZIG ET AL.

Examiner

Marc S. Zimmer

Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 14-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14, 16-20, 24 and 26-28 is/are rejected.
- 7) ☒ Claim(s) 15, 21-23, 25 and 29 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/20/05</u>  | 6) <input type="checkbox"/> Other: _____                          |

### ***Claim Objections***

Applicant is advised that should claim 21 be found allowable, claim 22 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

### ***Claim Analysis***

Applicant is advised that, for the purpose of evaluating the claimed invention against the prior art, the reacting steps in both product-by-process claim 14 and process claim 24 are considered not to exclude other compounds that are reactive with either the polyorganosiloxane or the polyisocyanate.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 14, 16-20, 24, and 26-28 rejected under 35 U.S.C. 103(a) as being unpatentable over Shores, U.S. patent # 5,543,171. Shores discloses a copolymer derived from the materials outlined in the paragraph bridging columns 2 and 3. Formation of oligomer (A) is described in column 5, lines 39-56 and entails reacting a hydrosilyl group-terminated polydiorganosiloxane with a mono-allyl ether of

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polyoxyalkylene thereby yielding essential a polydiorganosiloxane-polyether block-copolymer with hydroxyl-terminal groups. After preparing (A), it is combined with a polyisocyanate (C), and a compound (B) that will contain groups reactive towards those of either component (A) or component (C). See the paragraph bridging columns 6 and 7. According to column 7, lines 35-36, it is desirable that the stoichiometry of NCO groups contributed by (C) to the number of NCO-reactive groups contributed by (A) and (B) is 1.4-2. Examples of the polyisocyanate are offered in column 8, lines 51-57.

Shores does not explicitly address the matter of water content in the starting materials. Nevertheless, it is the Examiner's position that the skilled artisan would know to minimize water content as it is well known that water competes with compounds bearing isocyanate-reactive groups and, therefore, will alter the outcome of the polymerization in an adverse fashion. Indeed, isocyanates are known to self-crosslink in the presence of water with carbon dioxide be emitted as a by-product. See, for instance, the Background teachings of Weichmann et al., U.S. patent # 5,229,454. Indeed, there even seems to be an acknowledgement of this fact in the Shores document as they advocate reacting a chain extender with the product derived from the polymerization of (A), (B), and (C) prior to creating an aqueous solution of the copolymer because water will compete with the chain extender (column 8, lines 4-12). Based on this teaching, the skilled artisan would, likewise, expect water to react in competition with (A) and (B) in the preceding reaction.

Concerning claim 16, the full molecular weight of the hydroxy-functional polysiloxane-polyoxyethylene copolymer is 1500-50,000 thus the chain length limitation

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would be inherently satisfied. Concerning claims 26-28, it is contemplated that enough of reactant (B) shall be added to render the copolymer soluble in water due to the presence of neutralized acid moieties (the acid groups being neutralized by component D). See column 6, lines 26-37.

***Allowable Subject Matter***

Claims 15, 21-23, 25, and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Concerning claim 15, given the recommended stoichiometry of (A), (B), and (C) in the reference, their product would ostensibly have only free isocyanate moieties in the product whereas, even at a 1:1 stoichiometry of isocyanate groups to isocyanate reactive groups, the claimed products are believed to have a mixture of free isocyanate groups and isocyanate-reactive groups.

WO 2004/055088 and U.S. equivalent 2006/0247403 describe a product that is essentially identical to that claimed though it is prepared using slightly different methodology. However, this document does not represent prior art under either section 102(e) or 102(a).

It has been observed that the subject matter of claims 21 and 22 is very similar to that of claim 1 of co-pending application serial no. 11/139,000. However, the Examiner does not believe that product-by-process claims of the present application embrace the polymers of the co-pending application nor could it be ascertained why it would have been obvious to quaternize the nitrogen atoms of the presently claimed polymers.

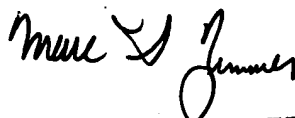
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc S. Zimmer whose telephone number is 571-272-1096. The examiner can normally be reached on Monday-Friday 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

April 2, 2007

  
MARC S. ZIMMER  
PRIMARY EXAMINER